MATH 150

Today

1. 5.4: Applications of exponential and logarithmic functions
2. Homefun 15

Goals:

1. Applications of exponential functions (Understand the ideas of exponential growth and decay as a percentage change)

Where is today's material used?

1. Physics: radioactive decay
2. Biology: population growth
3. Economics: interest

5.4 Applications of Exponential and Logarithmic Functions

1. Fancy limit: $\lim_{n\to\infty}\left(1+\frac{r}{n}\right)^n = e^r$.
2. Percentage growth and compounding ($(Q(t) = Q_0(1+r)^t, Q(t) = \left(1+\frac{r}{n}\right)^{nt}$)
3. Continuous growth ($Q(t) = Q_0e^{rt}$)
4. Doubling time/half-life
5. Examples. p. 384: 21, 22, 29, 52, 57, 56

Next Time

1. 5.5: L'Hôpital's Rule [13 min]